FIG. 1

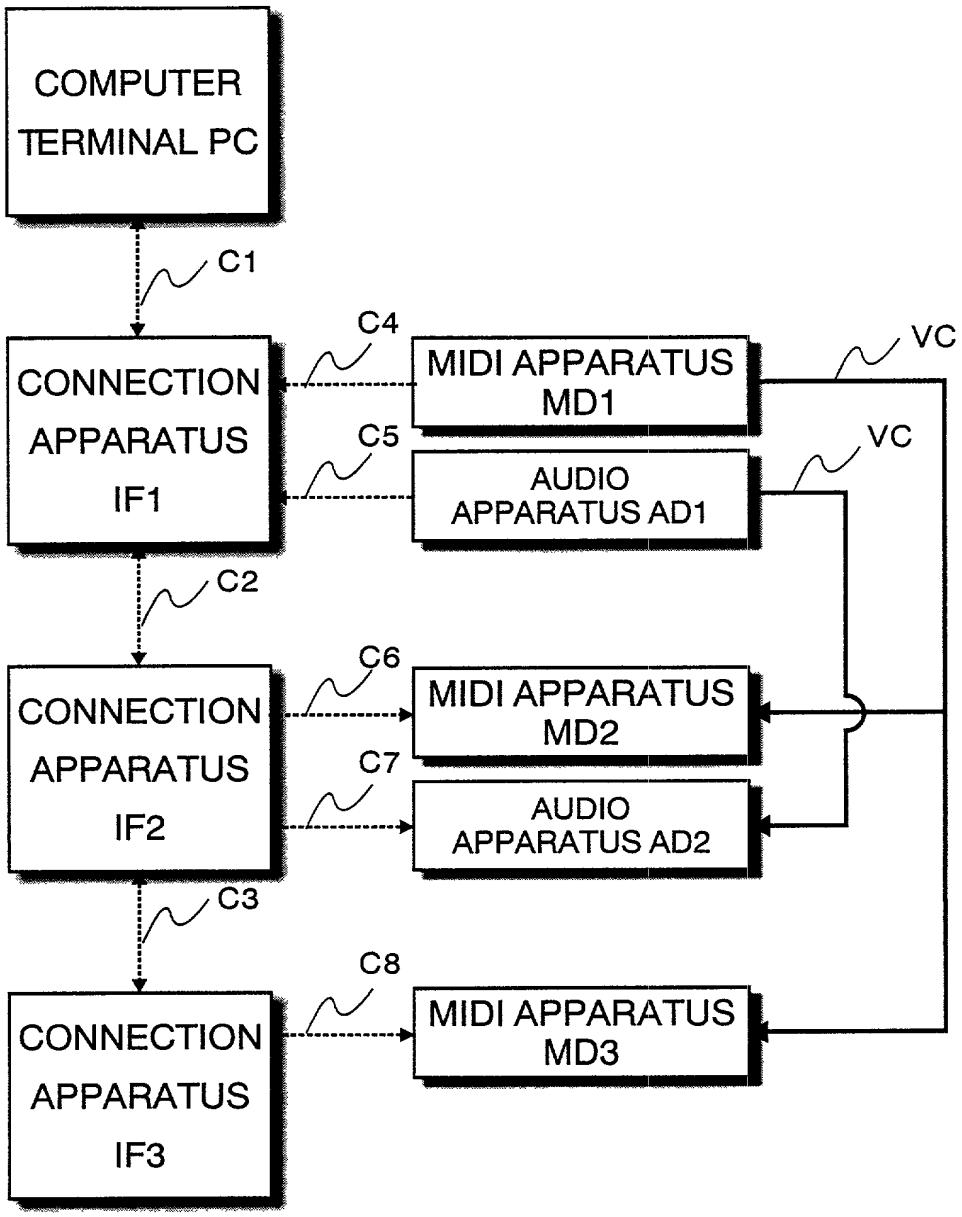

COMPUTER TERMINAL PC
C1
CONNECTION APPARATUS IF1
C4
C5
MIDI APPARATUS MD1
AUDIO APPARATUS AD1
VC
VC
C2
CONNECTION APPARATUS IF2
C6
C7
MIDI APPARATUS MD2
AUDIO APPARATUS AD2
C3
CONNECTION APPARATUS IF3
C8
MIDI APPARATUS MD3

FIG. 2

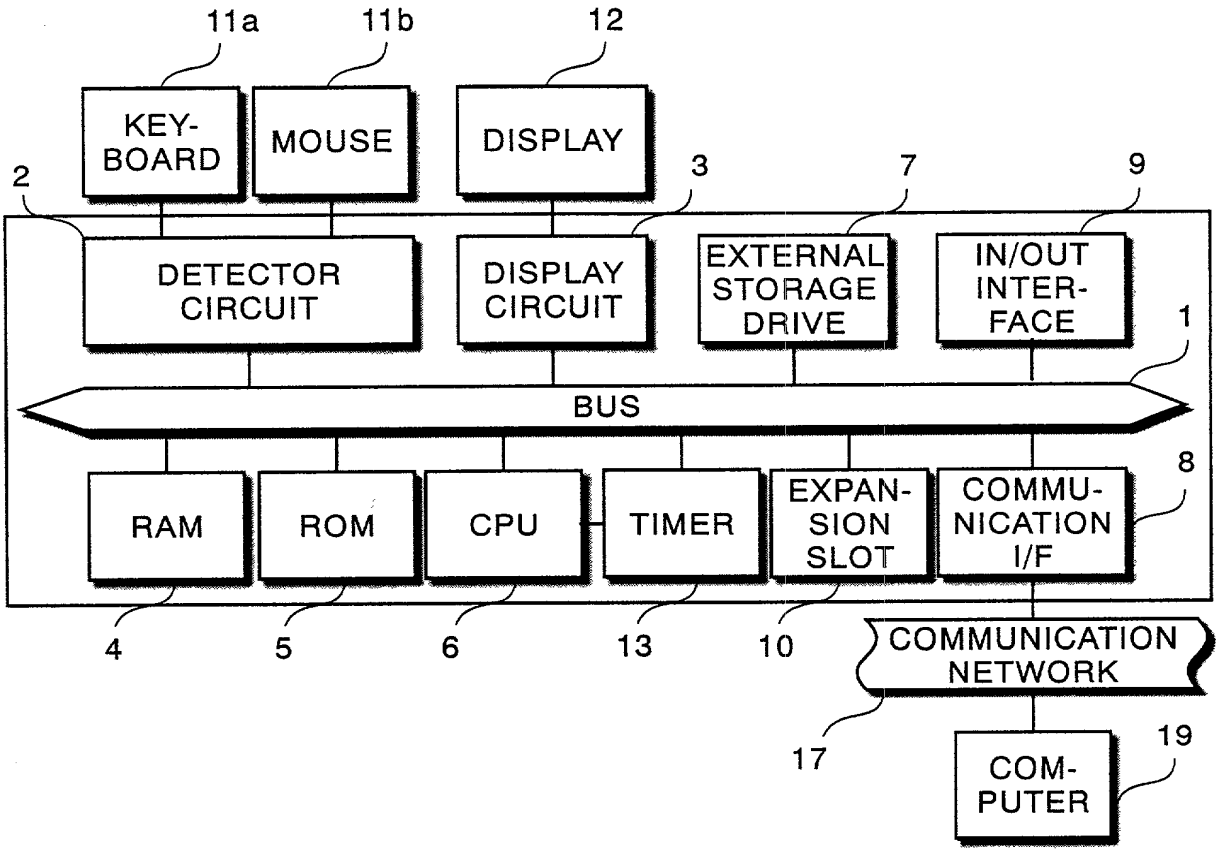

11a
11b
12
KEY-BOARD
MOUSE
DISPLAY
2
3
7
9
DETECTOR CIRCUIT
DISPLAY CIRCUIT
EXTERNAL STORAGE DRIVE
IN/OUT INTER-FACE
1
BUS
8
RAM
ROM
CPU
TIMER
EXPAN-SION SLOT
COMMU-NICATION I/F
4
5
6
13
10
COMMUNICATION NETWORK
17
19
COM-PUTER

FIG. 3

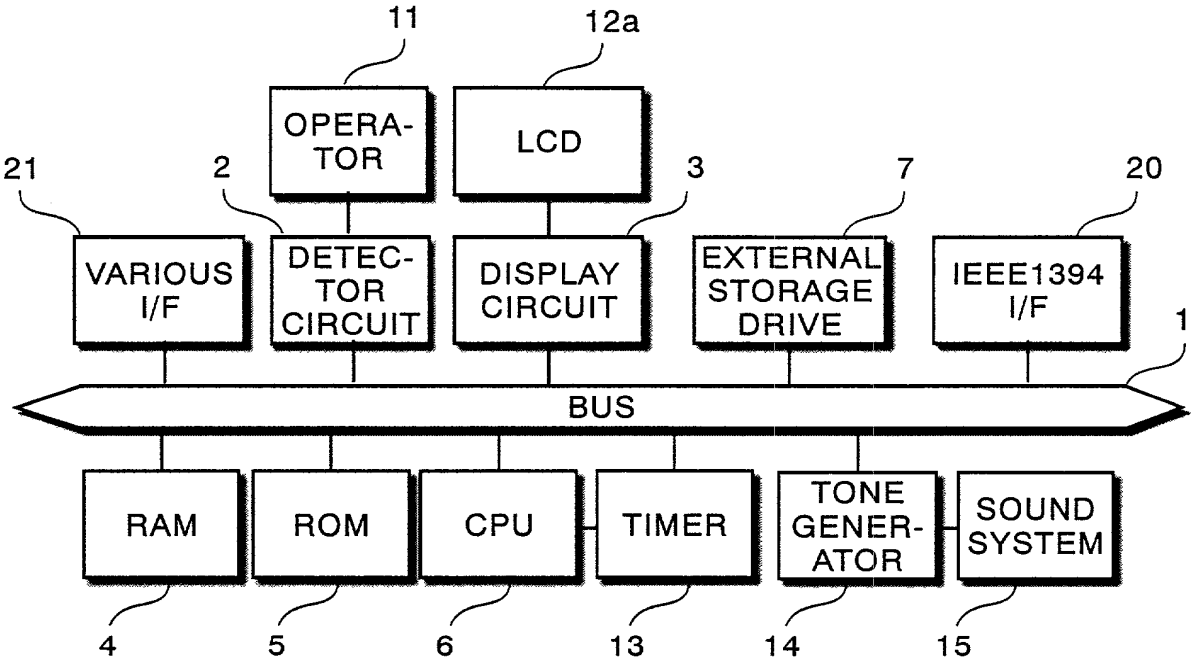

11
12a
OPERA-
TOR
LCD
21
2
3
7
20
VARIOUS
I/F
DETEC-
TOR
CIRCUIT
DISPLAY
CIRCUIT
EXTERNAL
STORAGE
DRIVE
IEEE1394
I/F
1
BUS
RAM
ROM
CPU
TIMER
TONE
GENER-
ATOR
SOUND
SYSTEM
4
5
6
13
14
15

FIG. 4A

<MIDI>	<AUDIO>		
[from]		[to]	
LINE NAME	APPARATUS NAME	LINE NAME	APPARATUS NAME
MIDIout1	MD1	----------	----------
MIDIout2	----------	----------	----------
MIDIout3	----------	----------	----------
		MIDIin1	
		MIDIin2	MD2
		MIDIin3	MD3

FIG. 4B

<MIDI>	<AUDIO>		
[from]		[to]	
LINE NAME	APPARATUS NAME	LINE NAME	APPARATUS NAME
AUDIOout1	AD1	----------	----------
AUDIOout2	----------	----------	----------
AUDIOout3	----------	----------	----------
		AUDIOin1	
		AUDIOin2	AD2
		AUDIOin3	

FIG. 5A

<MIDI>	<AUDIO>		
[from]		[to]	
LINE NAME	APPARATUS NAME	LINE NAME	APPARATUS NAME
MIDIout1	MD1	**MIDIin2**	**MD2**
		MIDIin3	**MD3**
MIDIout2	----------	----------	----------
MIDIout3	----------	----------	----------
		MIDIin1	
		MIDIin2	MD2
		MIDIin3	MD3

FIG. 5B

<MIDI>	<AUDIO>		
[from]		[to]	
LINE NAME	APPARATUS NAME	LINE NAME	APPARATUS NAME
AUDIOout1	AD1	**AUDIOin2**	**AD2**
AUDIOout2	----------	----------	----------
AUDIOout3	----------	----------	----------
		AUDIOin1	----------
		AUDIOin2	AD2
		AUDIOin3	

FIG. 6A

SERIAL PORT	IF1
OTHER TERMINALS	

FIG. 6B

SERIAL PORT	PC
IEEE1394(mLAN)1	IF2
IEEE1394(mLAN)2	
MIDIin	MD1
MIDIout	
AUDIOin	AD1
AUDIOout	

FIG. 6C

SERIAL PORT	
IEEE1394(mLAN)1	IF1
IEEE1394(mLAN)2	IF3
MIDIin	
MIDIout	MD2
AUDIOin	
AUDIOout	AD2

FIG. 6D

SERIAL PORT	
IEEE1394(mLAN)1	
IEEE1394(mLAN)2	IF2
MIDIin	
MIDIout	MD3
AUDIOin	
AUDIOout	

FIG. 7A

MIDIin1	
MIDIout1	MIDIin
AUDIOin1	
AUDIOout1	AUDIOin

FIG. 7B

MIDIin2	MIDIout
MIDIout2	
AUDIOin2	AUDIOout
AUDIOout2	

FIG. 7C

MIDIin3	MIDIout
MIDIout3	
AUDIOin3	
AUDIOout3	

FIG. 8

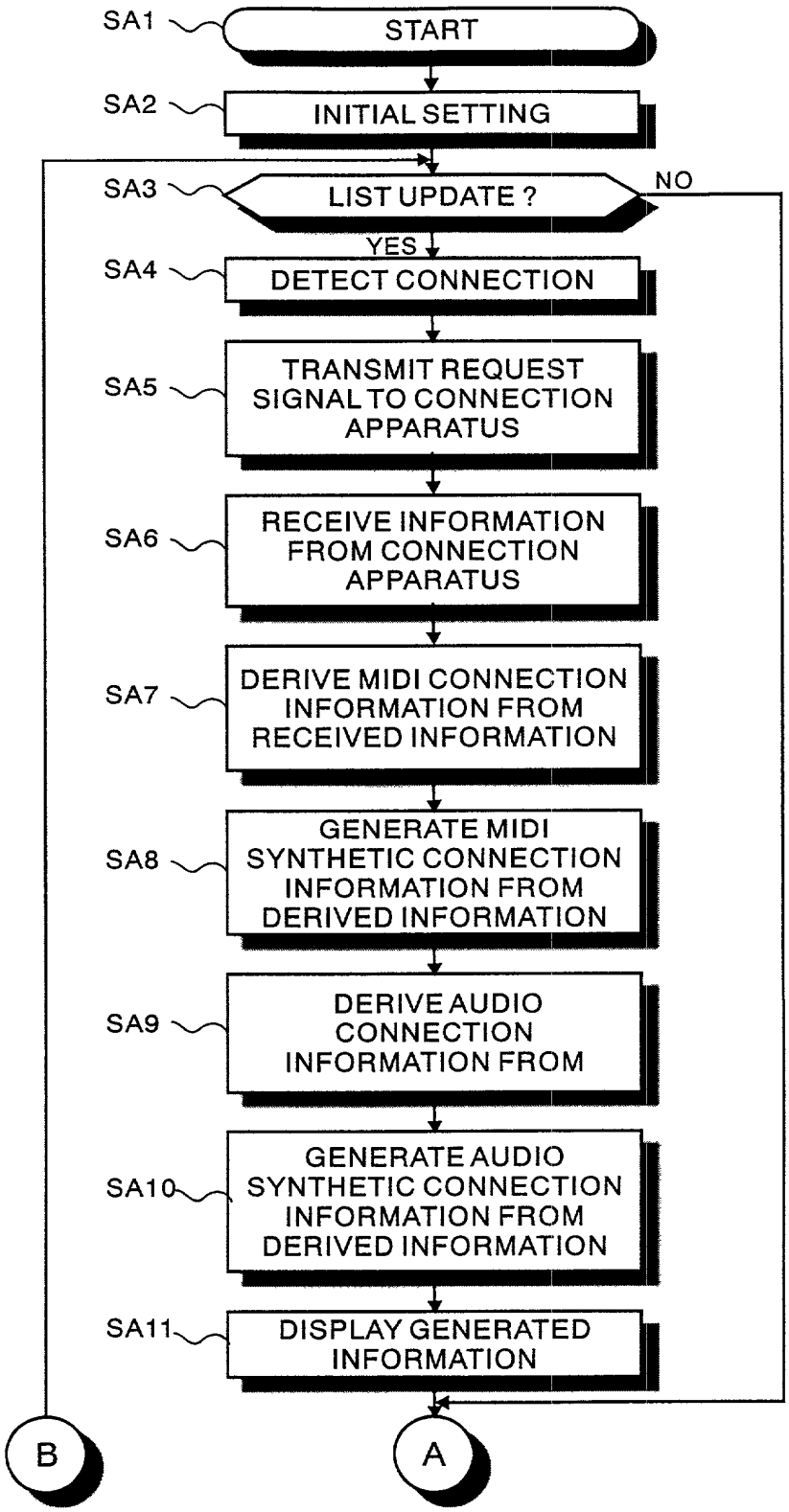

SA1
START
SA2
INITIAL SETTING
SA3
LIST UPDATE ?
NO
YES
SA4
DETECT CONNECTION
SA5
TRANSMIT REQUEST SIGNAL TO CONNECTION APPARATUS
SA6
RECEIVE INFORMATION FROM CONNECTION APPARATUS
SA7
DERIVE MIDI CONNECTION INFORMATION FROM RECEIVED INFORMATION
SA8
GENERATE MIDI SYNTHETIC CONNECTION INFORMATION FROM DERIVED INFORMATION
SA9
DERIVE AUDIO CONNECTION INFORMATION FROM
SA10
GENERATE AUDIO SYNTHETIC CONNECTION INFORMATION FROM DERIVED INFORMATION
SA11
DISPLAY GENERATED INFORMATION
B
A

FIG. 9

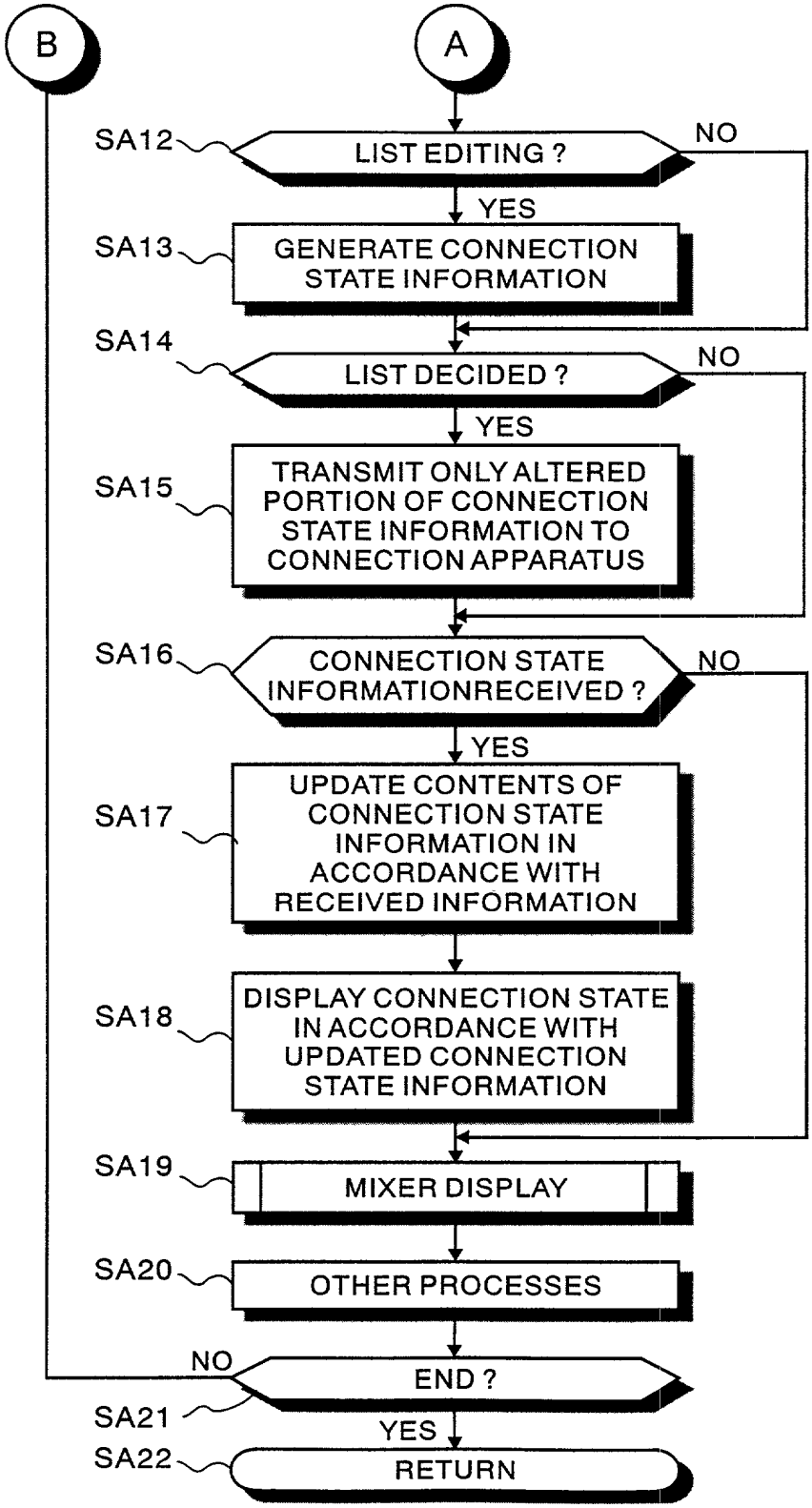

B
A
SA12
LIST EDITING ?
NO
YES
SA13
GENERATE CONNECTION STATE INFORMATION
SA14
LIST DECIDED ?
NO
YES
SA15
TRANSMIT ONLY ALTERED PORTION OF CONNECTION STATE INFORMATION TO CONNECTION APPARATUS
SA16
CONNECTION STATE INFORMATIONRECEIVED ?
NO
YES
SA17
UPDATE CONTENTS OF CONNECTION STATE INFORMATION IN ACCORDANCE WITH RECEIVED INFORMATION
SA18
DISPLAY CONNECTION STATE IN ACCORDANCE WITH UPDATED CONNECTION STATE INFORMATION
SA19
MIXER DISPLAY
SA20
OTHER PROCESSES
NO
END ?
SA21
YES
SA22
RETURN

FIG. 10A

LINE NAME	APPARATUS NAME
MIDIin1	
MIDIin2	MD2
MIDIin3	MD3
MIDIout1	MD1
MIDIout2	
MIDIout3	

FIG. 10B

LINE NAME	APPARATUS NAME
AUDIOin1	
AUDIOin2	AD2
AUDIOin3	
AUDIOout1	AD1
AUDIOout2	
AUDIOout3	

FIG. 11A

from	to	
MIDIout1	MIDIin2	MIDIin3
MIDIout2		
MIDIout3		

FIG. 11B

from	to
AUDIOout1	AUDIOin2
AUDIOout2	
AUDIOout3	

FIG. 12

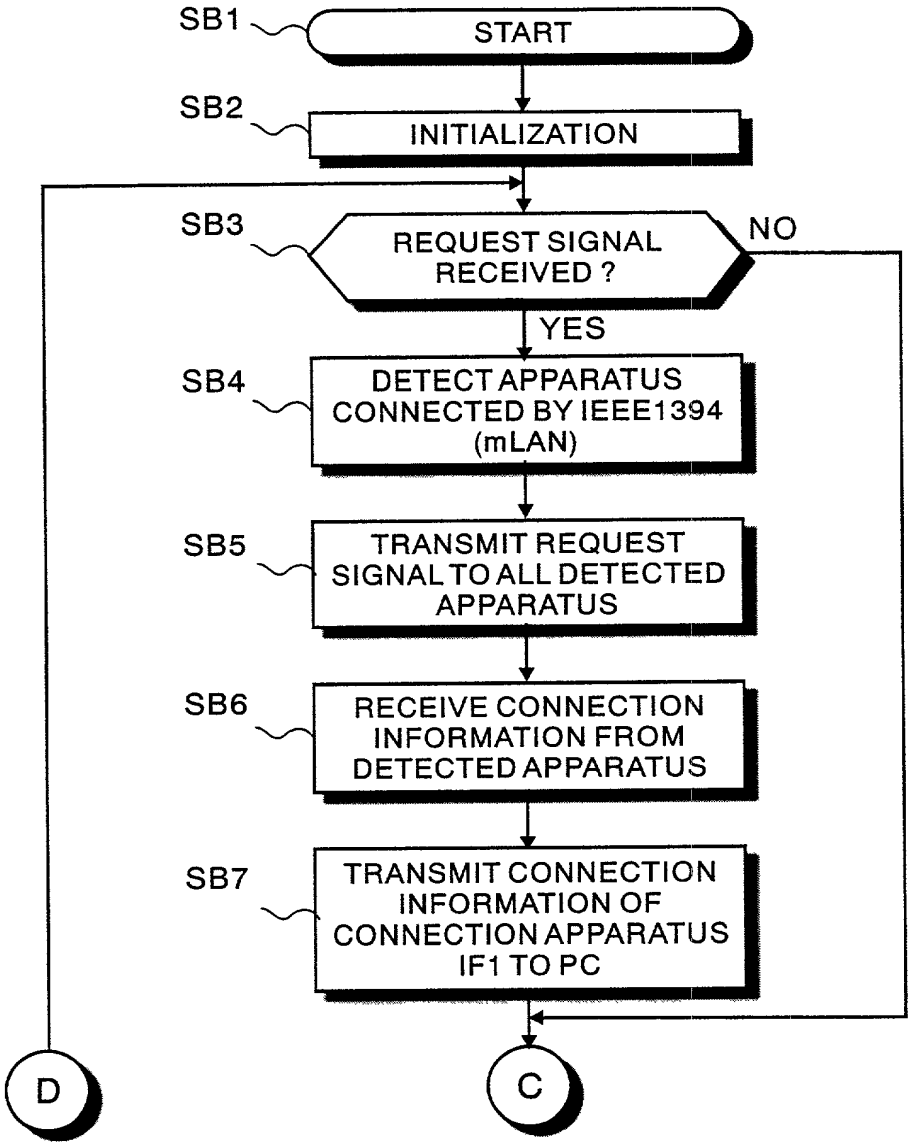
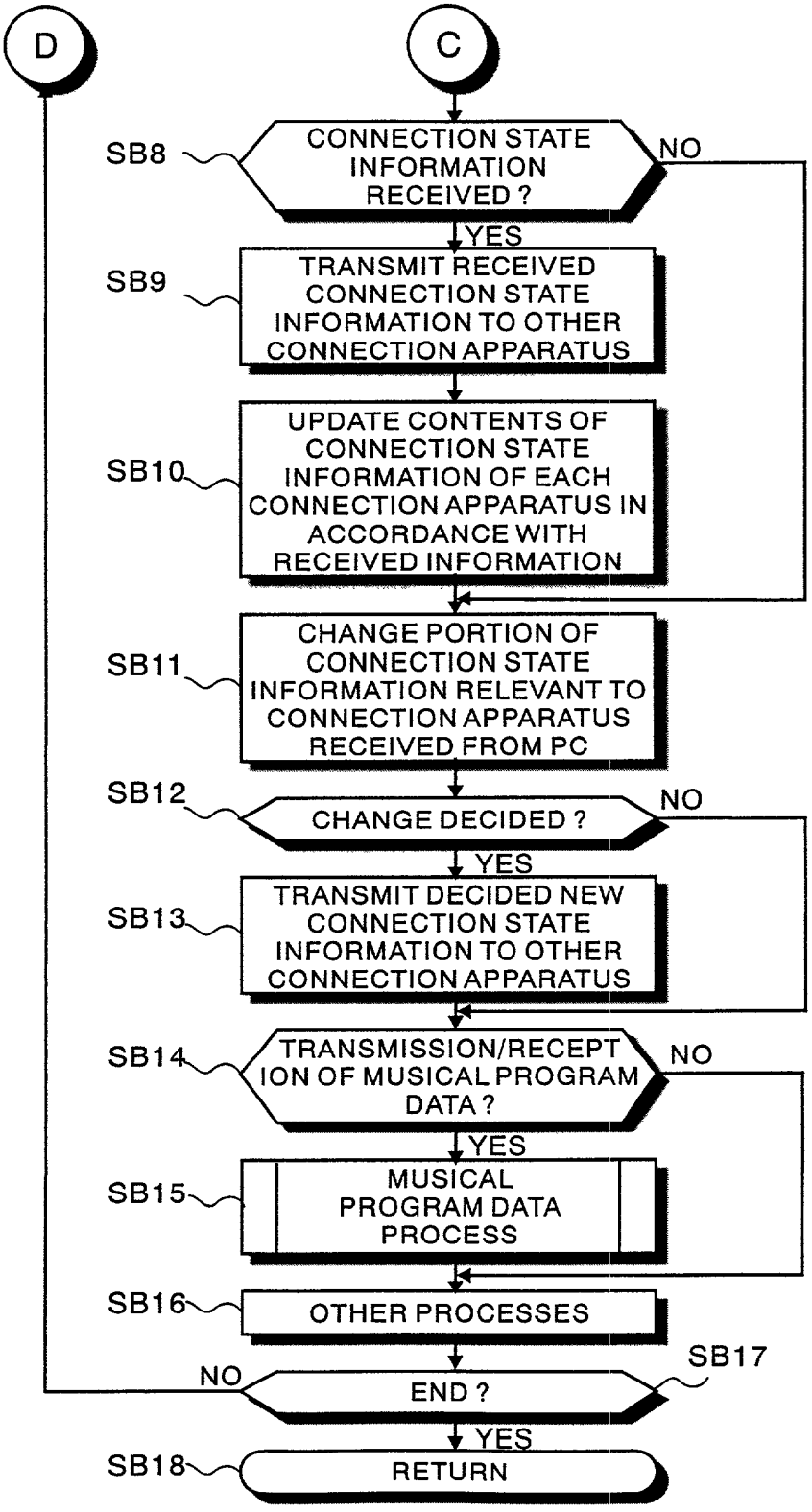

SB1
START
SB2
INITIALIZATION
SB3
REQUEST SIGNAL RECEIVED ?
NO
YES
SB4
DETECT APPARATUS CONNECTED BY IEEE1394 (mLAN)
SB5
TRANSMIT REQUEST SIGNAL TO ALL DETECTED APPARATUS
SB6
RECEIVE CONNECTION INFORMATION FROM DETECTED APPARATUS
SB7
TRANSMIT CONNECTION INFORMATION OF CONNECTION APPARATUS IF1 TO PC
D
C

FIG. 13


D
C
SB8
CONNECTION STATE INFORMATION RECEIVED ?
NO
YES
SB9
TRANSMIT RECEIVED CONNECTION STATE INFORMATION TO OTHER CONNECTION APPARATUS
SB10
UPDATE CONTENTS OF CONNECTION STATE INFORMATION OF EACH CONNECTION APPARATUS IN ACCORDANCE WITH RECEIVED INFORMATION
SB11
CHANGE PORTION OF CONNECTION STATE INFORMATION RELEVANT TO CONNECTION APPARATUS RECEIVED FROM PC
SB12
CHANGE DECIDED ?
NO
YES
SB13
TRANSMIT DECIDED NEW CONNECTION STATE INFORMATION TO OTHER CONNECTION APPARATUS
SB14
TRANSMISSION/RECEPTION OF MUSICAL PROGRAM DATA ?
NO
YES
SB15
MUSICAL PROGRAM DATA PROCESS
SB16
OTHER PROCESSES
SB17
NO
END ?
YES
SB18
RETURN